Solar Water Heating/SEIA Buildings Division Meeting
June 22, 2003 at the ASES Solar 2003 Convention - Stubb's BBQ, Austin, TX

Background: The Stubbs meeting was held in order to increase dialogue among the principal stakeholders of the solar thermal buildings program. DOE programmatic activities regarding Energy Star water heating proposals, as well as the desired incorporation of solar thermal into the electrical restructuring dialogue, were two principal topics that were discussed, both to inform the stakeholders and to receive feedback regarding the industry's position.

The opening remarks by Les Nelson, Chair of SEIA's Solar Buildings Division, expressed the need for solar thermal water heating stakeholders to reengage with SEIA to express their opinions and make recommendations about how SEIA can better serve the needs of the industry. SEIA serves as a national-level resource by accumulating and acting upon input from SEIA members regarding the future development of incentive mechanisms, education/training programs, and federal government support for solar energy. To ensure that a wide range of input was heard during this meeting, a round of opinions from all of those in attendance was solicited.

Attendees were asked to discuss any wish list items, goals, or other opinions regarding the current state of the solar industry and state/federal programs from their perspectives. What follows is a compilation of opinions expressed, some repeatedly, from meeting participants, which included Solar Thermal System Manufacturers, State Officials, Utility Program Managers, Million Solar Roofs partnership members, and Solar Consultants. A list of attendees, with email addresses, is attached.

Following is a nearly verbatim rendition of the comments taken during the meeting, and should be reviewed with the understanding that some of the commentators disagreed with others, and as a result obviously conflicting statements occur in some areas.

Economic:

- Solar Water Heating (SWH) is a $3.6 billion per year industry worldwide (vs. about $3.4 billion PV); need a greater effort to show that this sector has true potential for immediate implementation and real GW/hrs savings potential
- Cost reduction of solar hardware should be pursued
- No valuation for benefits (security, independence, etc.) vs. subsidized fossil fuels.
- Monazite by metering the energy production of solar thermal; Renewable Energy Credits (RECs) should accrue from solar thermal systems (green tag marketing and RPS compliance)
- Solar thermal has peak-shaving capabilities when displacing electric consumption, these capabilities should be recognized
- Lifecycle costing vs. simple payback calculations. Advertising is important. Also, there should be rational expectations about future cost reductions – the why buy now feeling in descending cost markets must be avoided.
- Should see a Systems Benefit Charge that gives out as much money for SWH as it does for PV.

- The RPS law is effective in Texas; solar thermal can theoretically participate in the Texas RPS…no one has

Education and Training Outreach

- Need for more installers.
- Need for more installers-contractors-vendors
- Need to preparing and develop skilled contractors (Distributed energy markets offer opportunities for interaction with Million Solar Roofs partnerships.)
- Developing a high-standard, high-quality certification program is important. Also need a national advertising campaign.
- Need some visible demonstrations to quell technology fears / image problems.
- Need outreach and education…. maintaining quality while increasing quantity.
- Need to work with large mainstream builders to integrate these things early on into new homes.
- HOA codes, covenants and restrictions are a problem.
- Installation quality and reputation – does not have even voluntary certification program
- Should work with plumbers, pipe fitters, HVAC unions, etc., as well as utilities to increase marketing.
- Emphasis over and over again on having installers out there that can market and install competently.
- People keep coming back to training, training, training.
- Consumer education is important – getting the word out.
- Look into Energy Service Companies for SHW systems. Need education of energy managers, so that they know to look into that.
- Everyone gets together, develops a curriculum, we circulate it for 12 months, then certify the manufacturers to train-the-trainers.

Federal Programs and Focus:

- Need consistent Federal energy policy over long term.
- Coordinate efforts on just three, four major initiative areas, as opposed to all being scattered on different things.
- Within Zero Energy Buildings program, it is unacceptable for buildings to have PV w/o SWH.

Hardware

- Solar panels can cost less than ½ of an equivalent sq. footage of high-quality residential windows.
- Roofline – flushing vs. strange optimization (collectors racked and not flush to the roof surface), and other aesthetic issues are a concern.
- Lowering cost of systems was shouted down by many installers / retailers, vs. quality of equipment, installation and long operating life.
- Lifecycle costing vs. simple payback calculations. Advertising. Rational expectations – the why buy now feeling in descending cost markets. Need for more installers.

- Installers require enough profit for them to do a quality job.
- International efforts – Caribbean, etc.?
- Major emphasis on training from many parties. We don't have quality standards the way HVAC does.
- Standardization is important.
- Work with plumbers, pipe fitters, HVAC unions, etc., as well as utilities to increase marketing. $2-3k / kW for thermal [not clear what this means].
- Marketing before developing infrastructure is a mistake; get more people into the industry by partnering with related trades and industries. More interested sellers will bring more marketing.
- Where are the Grundfos [pump] people? The tanks and insulation and controller people? We need to reach out to other component and other trades that could support our needs for policy changes. It's hard for the manufacturer of a panel to take responsibility for the reliability, when there's 6 or 8 other components in a system.

Certification Issues:

- The task analysis information is identifiable and available; what we have to do is persuade the people who oppose a national certification because of their fear that it will be too costly and is unnecessary. We need to get in with the plumbing, pipefitting, and heating people, and *get this done.* Not let NABCEP backburner this.
- Certification was originally attacked by several vocal stakeholders and manufacturers and declared it was a bad idea. NABCEP Board (includes Peter Lowenthal and Les Nelson) agreed to continue work on the task analysis, defining what a solar water heating installation foreman needs to know to perform well. Much of this work has already been drafted by FSEC, but review and consensus among the Thermal Technical committee (which has already been formed) must be achieved. NABCEP Board agreed not to proceed with the exam development and the testing program until enough buy in from industry stakeholders occurs, only after which NABCEP will consider proceeding with the next steps. The tasks analysis for PV took two years and thermal could take 6 months. We must have stakeholder buy-in.
- Discussion of these issues and consensus building are needed among Program Stakeholders, there are no planning goals, milestones or road map for the solar thermal industry. DOE facilitated the PV roadmap we deserve equal support.

Summarization

Les Nelson summarized and added reality checks to some of the wish list items:

- DOE cannot do advertising for our technology; they can support R&D.
- Congress would happily empty out the Solar Buildings R&D budget, if that's what we want. Need to ensure useful R&D activities.
- Lower equipment costs traditionally lead to greater sales has been the thinking driving the case for R&D in low cost systems. Some manufacturers are actively participating in cost shared research in that area. Maybe it will yield results that work. A lower cost system is possible and without some R&D most of other program activities would make it easier to cut what's supposed to be an R&D program. The

alternative is to have no R&D and thereby risk other Program support to develop new construction and other markets.

- New construction has real promise and we must stay the course in order to achieve gradual progress. The builders are generally change-resistant folks. They're un-willing partners and you have to stay in there and make the case for yourself. Some converts could set trends if we can showcase the successes to others.
- Reality Check: The "getting rid of the conventional energy subsidies" strategy is beyond SEIA's abilities. We should give up on that and work on things that we really can achieve. We need industry to rejoin the national trade association to support the common agenda and drive policy changes needed to gain access to markets. Solar Water Heating inclusion in Electric industry restructuring, Renewable Portfolio Standards, and System Benefit Charge programs is critical. SEIA needs resources to do this work on behalf of industry and the DOE programs.

NEXT STEPS

- Share this information with the larger community and try to maintain dialogue and interaction with all stakeholders and move forward.
- Cully Judd Dell Jones and Peter Lowenthal will attend ESTEC 2003 European Solar Thermal Energy Conference and the INTERSOLAR meeting in Freiberg, Germany to get a better idea of what has made the European industry grow at such a rate. This information will be shared with industry.